Hill Air Force Base, Utah

Final

Environmental Assessment:
Proposed Renovation of Building 225,
Hill Air Force Base, Utah

July 22, 2005

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
22 JUL 2005	**N/A**	**-**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Final Environmental Assessment: Proposed Renovation of Building 225, Hill Air Force Base, Utah	**F42650-03-D-0007**
	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
Klein, Randal Winn, Kay	5e. TASK NUMBER **0005**
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)	8. PERFORMING ORGANIZATION REPORT NUMBER
Streamline Consulting, LLC 1713 N. Sweetwater Lane Farmington, Utah 84025	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
Hill Air Force Base 7274 Wardleigh Road Hill AFB UT 84056	**75 CEG/CEVOR**
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT

Approved for public release, distribution unlimited

13. SUPPLEMENTARY NOTES

The original document contains color images.

14. ABSTRACT

Hill AFB proposes to accommodate current United States Air Force (USAF) missions by renovating Building 225 on Hill AFB. The proposed action is needed to meet operational requirements and to provide safe working conditions. The proposed building renovation would include completing a variety of structural upgrades, replacing degraded functional systems, removing asbestos and lead based paint, improving security access controls, and completing the renovation while conforming to any historical preservation constraints identified for this hangar.

15. SUBJECT TERMS

Environmental Assessment Hill Air Force Base

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**UU**	**30**	

Final

Environmental Assessment (EA): Proposed Renovation of Building 225, Hill Air Force Base, Utah

Contract F42650-03-D-0007, Delivery Order #0005

Department of the Air Force
Air Force Materiel Command
Hill Air Force Base, Utah 84056

July 22, 2005

Prepared in accordance with the Department of the Air Force Environmental Impact Analysis Process (EIAP) 32 CFR Part 989, Effective July 6, 1999, which implements the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) regulations.

EXECUTIVE SUMMARY

Purpose and Need

The purpose of the proposed action is to accommodate current United States Air Force (USAF) missions by renovating Building 225 at Hill Air Force Base (AFB). The building renovation would include completing a variety of structural upgrades, replacing degraded functional systems, removing asbestos and lead based paint, improving security access controls, and completing the renovation while conforming to any historical preservation constraints identified for this hangar.

The proposed action is needed to meet operational requirements and to provide safe working conditions. Building 225 was constructed in 1942, using war time construction methods and was not designed for long-term use or the production methods used for today's modern aircraft. Current workload requirements, outdated utilities, and substandard infrastructure create the need for the proposed renovation of this the hangar. The fact that the existing tar roof is leaking in over 200 places, there are as many as four sets of inoperable fire alarms, and the presence of lead-based paint in working areas are just a few examples of the need for this proposed action.

Scope of Review

During construction, solid and hazardous wastes (such as asbestos and lead) and air emissions would be generated. No disturbance to the land surface is proposed, but two narrow trenches could be constructed near areas of contaminated soils. No species of plants or animals listed as threatened or endangered are known to occur on Hill AFB. Building 225 is an historic structure, and has been determined eligible for inclusion in the *National Register of Historic Places*. Related to long term operations in Building 225, the proposed action would not alter any existing activities.

The issues that were identified for detailed consideration are: air quality, solid and hazardous wastes, cultural and historical resources; and physical environment (surface soils). Environmental effects of the no action alternative were also considered.

Selection Criteria

The facility that accommodates the 309 Aircraft Maintenance Wing (AMXG) F-16 (organizational symbol of 309 AMXG/MXAC) and C-130 (organizational symbol of 309 AMXG/MXAB) modification, repair, and maintenance functions should:

- have sufficient space to house all of the necessary equipment and workers;
- allow workers to efficiently complete their assigned workload;
- provide security measures for the F-16 and C-130 programs; and
- be protective of facilities, human health, and the environment.

Proposed Action

Proposed Action - The proposed action includes all work necessary to renovate Building 225 at Hill AFB. The proposed addition would include: inspecting the hangar and repairing any structural deficiencies; installing a new rubberized and insulated roofing system; installing modern light-diffusing, insulated skylights; resurfacing and sealing the concrete flooring; replacing the fire alarm and sprinkler systems; upgrading electrical, HVAC, and plumbing systems to meet the UFC government building codes; upgrading pneumatic and hydraulic systems; removing asbestos and lead based paint; reconfiguring underutilized space within the hangar; installing four indoor utility sheds to house communications equipment; replacing miscellaneous pieces of outdated equipment; removing 62 years' accumulation of cadmium, other metals, and grime; painting interior surfaces; installing new card readers for secure access control; and completing the renovation while conforming to any historical preservation constraints identified for this hangar.

No Action Alternative – Under the no action alternative, it is predicted that Hill AFB may be unable to provide sufficient capacity for modification, repair, and maintenance functions for F-16 and C-130 aircraft. It is therefore possible that aircraft would be grounded, and mission requirements for sorties would not be met.

Additional Alternatives - The 309 AMXG program managers evaluated, but eliminated, other potential locations for housing the activities that currently occur in Building 225. These alternatives were not retained for detailed consideration due to the specialized nature of USAF workload assignments to Hill AFB, and lack of other local facilities with sufficient space and/or security measures to accommodate the F-16 and C-130 workload.

Results of the Environmental Assessment

The proposed action and the no action alternative were both considered in detail. The proposed action could be implemented with minor air emissions of short term duration. In the long term, air emissions would be decreased by 0.08 pounds of HAPs and 0.33 pounds of VOCs on an annual basis, which is an insignificant reduction for Hill AFB. The proposed action would eliminate potential worker exposures to asbestos fibers and lead-based paint particles. During construction, wastes containing asbestos, lead-based paint, PCBs, cadmium, and any contaminated soils would all be stored, transported, and disposed properly. The proposed renovation of Building 225 would have no adverse affect on cultural or historical resources. Skylights would be replaced in kind, and the remaining activities would not impact the historic character of the building. No long-term environmental impacts are expected from either the proposed action or the no action alternative.

COMPARISON OF ALTERNATIVES

Issue	**Proposed Action** **Renovate Building 225**	**No Action** **Do Not Renovate Building 225**
Air Quality	There would be minor, temporary construction-related emissions. Long term, a very small (insignificant) reduction in air emissions would be achieved. Eliminates potential worker exposures to asbestos fibers.	Current conditions would continue. Potential for worker exposures to asbestos fibers.
Solid and Hazardous Wastes	Potential hazardous wastes would be tested and disposed as required by law. Eliminates potential worker exposures to lead-based paint.	Current conditions would continue. Flakes of lead-based paint would continue to fall.
Cultural and Historical Resources	No adverse impact. Skylights would be replaced in kind, and the remaining activities would not impact the historic character of the building.	No impact.
Surface Soils	No impact.	No impact.

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LIST OF ACRONYMS AND CHEMICAL TERMS

AFB	Air Force Base
AMXG	Aircraft Maintenance Wing
BTU	British Thermal Units
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DAQ	Utah Division of Air Quality
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EPA	United States Environmental Protection Agency
ft^2	Square Feet
FONSI	Finding of No Significant Impact
HAP	Hazardous Air Pollutant
HVAC	Heating Ventilation Air Conditioning
HVOF	High Velocity Oxygen Fuel
IRP	Installation Restoration Program
mg/ℓ	Milligrams Per Liter
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO_x	Oxides of Nitrogen
O_3	Ozone
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PM-10	Particulates Smaller Than 10 Microns in Diameter
ppm	Parts Per Million
RCRA	Resource Conservation and Recovery Act
SO_2	Sulfur Dioxide
TCLP	Toxicity Characteristic Leaching Procedure
TSCA	Toxic Substances Control Act
UAC	Utah Administrative Code
US	United States of America
UFC	Unified Facilities Criteria
USAF	United States Air Force
VOC	Volatile Organic Compound
XRF	X-ray Fluorescence

1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

Hill Air Force Base (AFB) is an air logistics center that maintains aircraft, missiles, and munitions for the United States Air Force (USAF). In support of that mission, Hill AFB: provides worldwide engineering and logistics management for the F-16 Fighting Falcon and A-10 Thunderbolt; accomplishes depot repair, modification, and maintenance of the F-16, A-10 Thunderbolt, and C-130 Hercules aircraft; and overhauls and repairs landing gear, wheels and brakes for military aircraft, rocket motors, air munitions, guided bombs, photonics equipment, training devices, avionics, instruments, hydraulics, software, and other aerospace related components.

This document addresses proposed construction activities related to facilities that house modification, repair, and maintenance functions for F-16 and C-130 aircraft in accordance with USAF mission requirements and technical order specifications. These activities are currently performed in Building 225, Hill AFB, by the F-16 and C-130 maintenance groups of the 309 Aircraft Maintenance Wing (the wing's organizational designation is 309 AMXG).

1.2 Purpose and Need

The purpose of the proposed action is to accommodate current USAF missions by renovating Building 225 at Hill AFB. Building 225 is an aircraft modification, repair, and maintenance hangar, originally constructed in 1942. The building renovation would include: inspecting the hangar and repairing any structural deficiencies; installing a new rubberized and insulated roofing system; installing modern light-diffusing, insulated skylights; resurfacing and sealing the concrete flooring; replacing the fire alarm and sprinkler systems; upgrading electrical, heating ventilation air conditioning (HVAC), and plumbing systems to meet the Unified Facilities Criteria (UFC) government building codes; upgrading pneumatic and hydraulic systems; removing asbestos and lead based paint; reconfiguring underutilized space within the hangar; installing four indoor utility sheds to house communications equipment; replacing miscellaneous pieces of outdated equipment; removing 62 years' accumulation of cadmium, other metals, and grime; painting interior surfaces; installing new card readers for secure access control; and completing the renovation while conforming to any historical preservation constraints identified for this hangar.

Building 225 was constructed in 1942, using war time construction methods and was not designed for long-term use or the production methods used for today's modern aircraft. Current workload requirements, outdated utilities, and substandard infrastructure create the need for the proposed renovation of this the hangar. The hangar is now 63 years old, and very few modernization efforts have taken place since the original construction. The proposed action is needed to meet operational requirements and to provide safe working conditions, as discussed in the paragraphs that follow.

The hangar's existing structure may not accommodate the proposed modernization efforts (for example, a fire suppression system or a rubberized roof). The existing tar roof is leaking in over 200 places. The leaks and falling insulation have occurred on a regular basis, causing loss of production and endangering both workers and aircraft. Many of the 1,200 original glass skylights have little or no insulating properties and have been weakened by years of wind, snow build up, and intense heat during the summer months. The existing glass skylights allow undiffused light to penetrate into the hangar causing excess heat in the summer, and creating glare, making aircraft repair activities virtually impossible at certain times of the day. The concrete floor is badly damaged from years of exposure and punishment from heavy industrial operations and building modifications.

The fire alarm system and sprinkler system are of original design, and are not capable of protecting current and future work throughout the hangar. There are as many as four sets of inoperable fire alarms. Electrical utilities are of 1942 standards and do not meet UFC government building codes. Much of the insulation covering the wiring is cracked and peeling, which poses an imminent fire hazard throughout the hangar, as well as a risk of electrocution to workers. Approximately 500 trouble calls are initiated each year concerning the electrical, HVAC, plumbing, pneumatic, and hydraulic systems throughout the building.

Many of the insulating panels and tiling located in restrooms and flooring throughout Building 225 contain asbestos materials, creating a potential hazard to workers in and around the hangar. Much of the existing paint material is lead based and is chipped and peeling. This paint material is being found inside the aircraft being repaired, which increases repair and maintenance time. The presence of lead-based paint chips creates a potential hazard to workers in and around the hangar.

Hangar space is currently underutilized due to many uncoordinated changes over the 63 years the hangar has been operational. The hangar's current configuration does not maximize the usable space in which aircraft repair and maintenance activities could occur. Insufficient utility sheds exist in which to store communications equipment.

Interior walls and ceilings, which are covered with sixty years of dirt and grime, are in considerable need of cleaning and painting. Current access controls do not supply the desired level of force protection.

Given the current working environment, including safety and health hazards, and deteriorating roof and skylights, reduced workload capability and potential danger to workers and aircraft would continue to occur if an improved workspace is not provided.

1.3 Location of the Proposed Action

Hill AFB is located approximately twenty five miles north of downtown Salt Lake City and seven miles south of downtown Ogden, Utah (Figure 1). Hill AFB is surrounded by several communities: Roy and Riverdale to the north; South Weber to the northeast; Layton to the south; and Clearfield, Sunset, and Clinton to the west. The base lies

primarily in northern Davis County with a small portion located in southern Weber County.

Building 225 is located in the southeastern portion of the base, approximately 0.75 miles north of the south entrance gate (Figure 2).

1.4 Scope of the Environmental Review and Anticipated Environmental Issues

The scope of this environmental review is to analyze environmental concerns related to renovating Building 225.

Related to the construction phase, solid and hazardous wastes (such as asbestos and lead) would be generated and would require proper management and coordination with state regulatory agencies. Additional hazardous wastes could be generated if a spill of fuel, lubricants, or construction-related chemicals were to occur. No industrial wastewater discharges are anticipated as a result of the proposed action. Air emissions would be produced by construction equipment.

No disturbance to the land surface is proposed, but two narrow trenches could be constructed within the existing building in which cables, conduit, and pipes could be routed. Contamination of shallow soil does exist beneath Building 225.

No surface water resources exist within the immediate area of the proposed action. Contamination of groundwater has been detected beneath Building 225, but since groundwater exists at depths in excess of 100 feet below the structure, groundwater impacts will not be addressed by this document.

No species of plants or animals listed as threatened or endangered are known to occur on Hill AFB (Hill AFB 2005a; Hill AFB 2005b), and the proposed action would not extend beyond the existing footprint of Building 225.

Building 225 is an historic structure, and has been determined eligible for inclusion in the *National Register of Historic Places*.

Related to long term operations in Building 225, the proposed action would not alter any existing activities. The existing modification, repair, and maintenance functions for F-16 and C-130 aircraft would continue as they are currently performed.

The issues that have been identified for detailed consideration and are therefore presented in Sections 3 and 4 are: air quality, solid and hazardous wastes, cultural and historical resources; and physical environment (surface soils). Environmental effects of the proposed action and the no action alternative were considered in detail. Section 2.4 describes one additional alternative that was eliminated from detailed consideration.

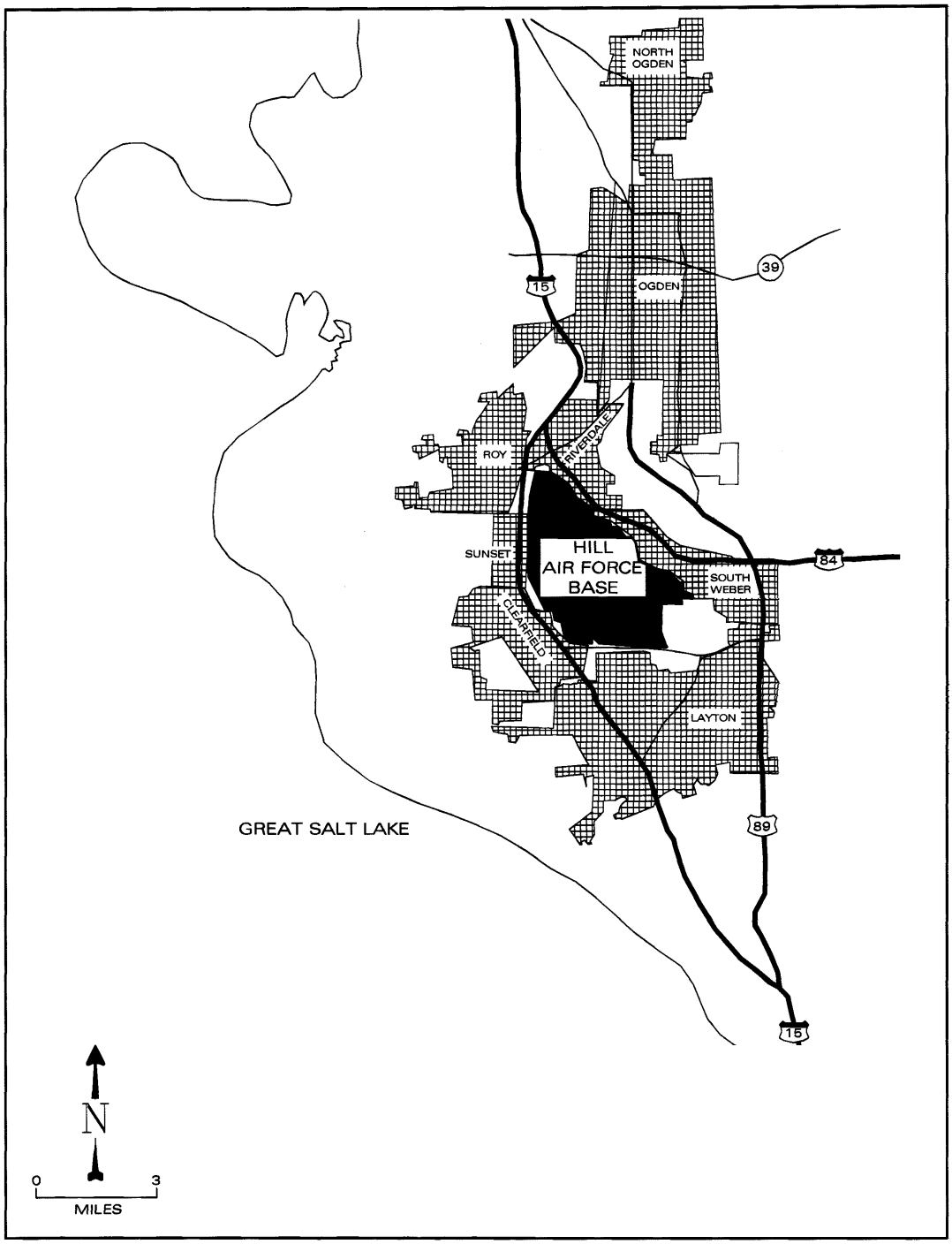

Figure 1: Hill AFB Location Map

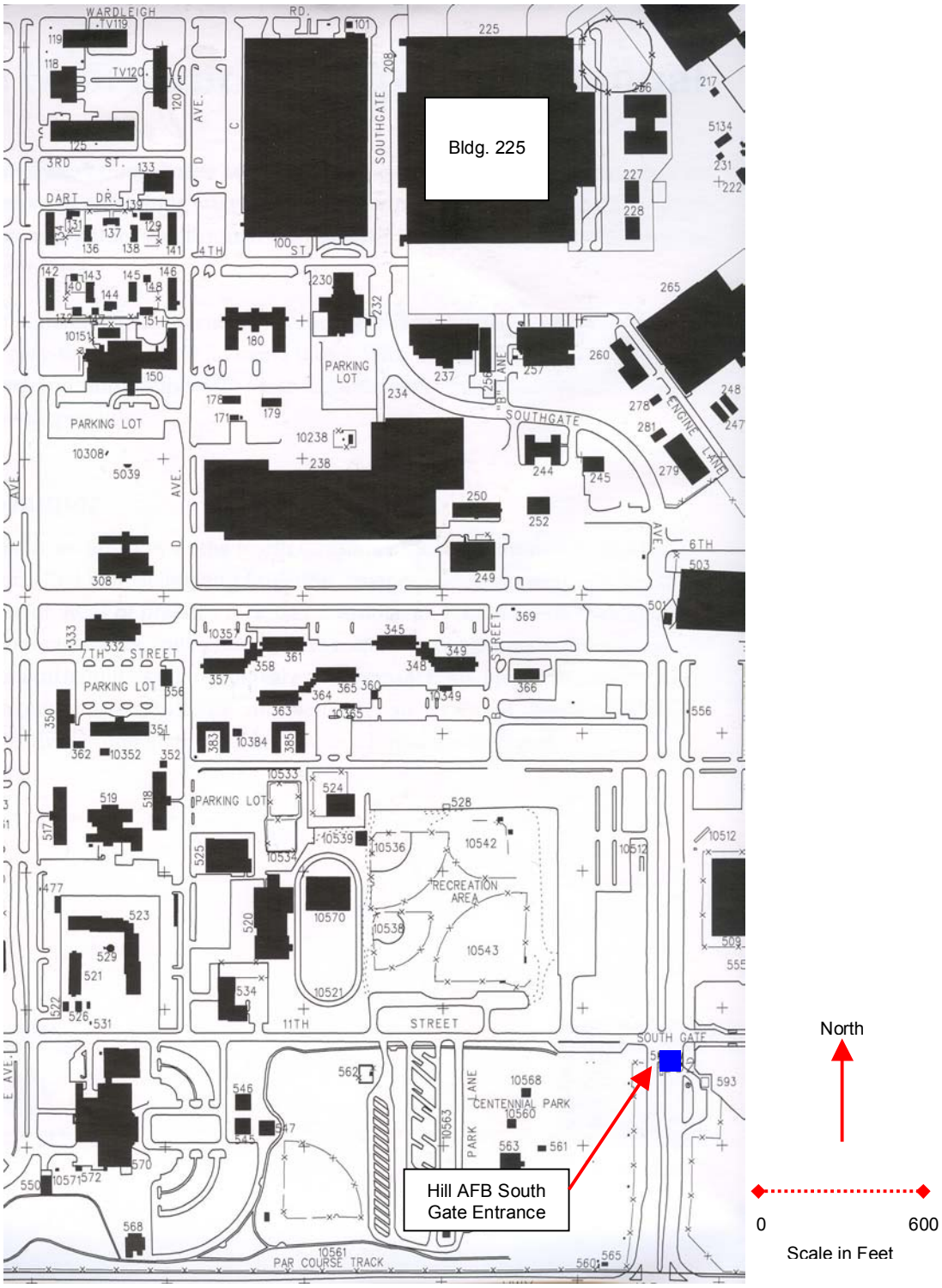

Figure 2: Location of the Proposed Building 225 Renovation

1.5 Applicable Regulations and Permits

USAF activities are mandated to comply with conditions of the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality's regulations for implementing the procedural provisions of NEPA (40 CFR 1500-1508), and USAF-specific requirements contained in 32 CFR Part 989, *Environmental Impact Analysis Process* (EIAP).

Throughout the construction phase of the project, Hill AFB contractors would follow safety guidelines of the Occupational Safety and Health Administration (OSHA) as presented in the *Code of Federal Regulations* (CFR). Should any Hill AFB employees participate in constructing the proposed action, they would comply with relevant Air Force occupational safety and health standards.

In Utah, asbestos abatement projects must be conducted in accordance with the *Utah Administrative Code* (UAC), Section R307-801. Air emissions generated by the proposed action must be addressed in accordance with Utah's *State Implementation Plan*, which complies with the Clean Air Act's *General Conformity Rule*, Section 176 (c). A conformity analysis was conducted for this proposed action as specified by "*Determining Conformity of Federal Actions to State or Federal Implementation Plans*," 40 CFR 93.154. Specific discussions for air emissions and potential impacts related to the proposed action are presented in Sections 3 and 4 of this document.

The proposed construction would be expected to generate wastes that are regulated by the Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act (TSCA), or similar law. Hazardous wastes at Hill AFB are routinely and properly handled in accordance with RCRA regulations, Utah hazardous waste management regulations contained in the UAC Section R315, and the *Hill AFB Hazardous Waste Management Plan*. These regulations control hazardous waste from its origin and storage to ultimate treatment, and/or disposal. In Utah, the above regulations are enforced by the Utah Division of Solid and Hazardous Waste. The potential for generation of hazardous waste during the proposed renovation of Building 225 is discussed in Sections 3 and 4 of this document.

The Hill AFB Installation Restoration Program (IRP) has completed remedial investigations in the vicinity of the proposed action according to the conditions of a federal facility agreement and the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). Specific discussions for ongoing CERCLA activities and requirements related to the proposed action are presented in Sections 3 and 4 of this document.

A comprehensive cultural resources inventory was conducted for Building 225 in accordance with Section 106 of the National Historic Preservation Act. The proposed construction is not expected to contact any cultural resources (defined as archaeological, architectural, or traditional cultural properties) for which a significant effect or adverse impact would exist (see Sections 3 and 4 of this document). If additional suspected or

actual cultural resources should be observed during construction, work in the immediate vicinity would stop, and the Hill AFB cultural resources manager would implement inadvertent discovery procedures in accordance with the Hill AFB *Integrated Cultural Resources Management Plan*.

Since the project would not disturb the land surface, a stormwater construction permit would not be required.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section describes selection criteria, the proposed action, the no action alternative, and one additional alternative that was considered.

2.1 Selection Criteria

As discussed in Sections 1.1 and 1.2, the 309 AMXG occupies Building 225 to accomplish modification, repair, and maintenance functions for F-16 and C-130 aircraft in accordance with USAF mission requirements and technical order specifications. Building 225 was constructed in 1942, is now 63 years old, and is in need of extensive renovation to meet operational requirements and to provide safe working conditions.

Due to these considerations, the following selection criteria were established. The facility that accommodates the 309 AMXG F-16 (organizational symbol of 309 AMXG/MXAC) and C-130 (organizational symbol of 309 AMXG/MXAB) modification, repair, and maintenance functions should:

- have sufficient space to house all of the necessary equipment and workers;
- allow workers to efficiently complete their assigned workload;
- provide security measures for the F-16 and C-130 programs; and
- be protective of facilities, human health, and the environment.

2.2 Proposed Action: Renovate Building 225

The proposed action includes all work necessary to renovate Building 225 at Hill AFB.

The proposed building renovation would include: inspecting the hangar and repairing any structural deficiencies; installing a new rubberized and insulated roofing system; installing modern light-diffusing, insulated skylights; resurfacing and sealing the concrete flooring; replacing the fire alarm and sprinkler systems; upgrading electrical, HVAC, and plumbing systems to meet the UFC government building codes; upgrading pneumatic and hydraulic systems; removing asbestos and lead based paint; reconfiguring underutilized space within the hangar; installing four indoor utility sheds to house communications equipment; replacing miscellaneous pieces of outdated equipment; removing 62 years' accumulation of cadmium, other metals, and grime; painting interior surfaces; installing new card readers for secure access control; and completing the renovation while conforming to any historical preservation constraints identified for this hangar.

The environmental impacts of the proposed action are summarized in Section 4.5 of this document, and are discussed at greater length throughout Section 4 of this document.

2.3 No Action Alternative: Do Not Remodel Building 225

The no action alternative does not meet the selection criteria to allow workers to efficiently complete their assigned workload; or to be protective of human health. However, the framework of an environmental assessment (EA) requires that the no action alternative must be considered even if it does not meet all of the selection criteria.

Under the no action alternative, it is predicted that Hill AFB may be unable to provide sufficient capacity for modification, repair, and maintenance functions for F-16 and C-130 aircraft. It is therefore possible that aircraft would be grounded, and mission requirements for sorties would not be met.

The environmental impacts of the no action alternative are summarized in Section 4.5 of this document, and are discussed at greater length throughout Section 4 of this document.

2.4 Identification Of Alternatives Eliminated From Further Consideration

The 309 AMXG program managers evaluated, but eliminated, other potential locations for housing the activities that currently occur in Building 225. Hill AFB is the Air Force's only modification center for F-16 aircraft within the United States (US) boundaries. Hill AFB is the Air Force's secondary repair center for C-130 aircraft. The primary location for C-130 aircraft repair at Warner Robbins AFB could not accommodate the workload being performed in Building 225. No other building exists on Hill AFB that could accommodate this workload, either in its current condition or by being renovated. No off-site local industrial facility exists (for example at Freeport Center in Clearfield, Utah) with sufficient space and/or security measures to accommodate the F-16 and C-130 workload. Constructing a brand new facility on Hill AFB was eliminated by the 309 AMXG program managers as being cost prohibitive.

3.0 EXISTING ENVIRONMENT

3.1 Air Quality

Hill AFB is located in Davis and Weber Counties, Utah. Neither county is in complete attainment status with federal clean air standards (Figure 4). Nonattainment areas fail to meet national ambient air quality standards (NAAQS) for one or more of the criteria pollutants: oxides of nitrogen (NO_x), sulfur dioxide (SO_2), ozone (O_3), particulates less than 10 microns in diameter (PM-10), carbon monoxide (CO), and lead. Davis County was upgraded from an ozone non-attainment area to a maintenance area, effective 1997. Current status according to the Utah Division of Air Quality (DAQ 2003) for the City of Ogden in Weber County (approximately seven miles north of the proposed action) is designation as a non-attainment area for PM-10 and a maintenance area for CO.

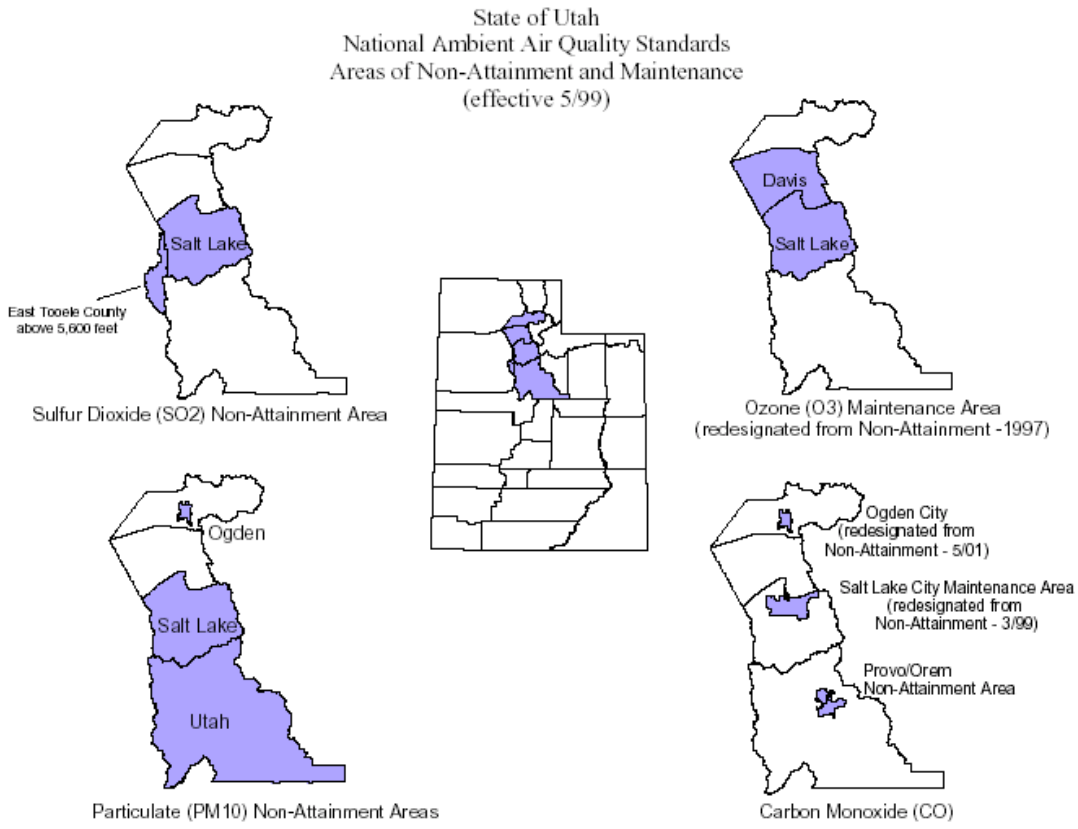

Figure 3: State of Utah National Ambient Air Quality Standards, Areas of Non-Attainment and Maintenance (Effective 5/99)

The current air quality trend at Hill AFB is one of controlling emissions as Hill AFB managers implement programs to eliminate ozone-depleting substances, limit use of volatile organic compounds (VOCs), install VOC emission control equipment for painting operations, switch to lower vapor pressure solvents and aircraft fuel, convert internal combustion engines from gasoline and diesel to natural gas, and improve the capture of particulates during painting and abrasive blasting operations (in compliance with the base's Title V air quality permit).

Heat is provided to Building 225 from the Hill AFB central steam plant. The 43 existing forced air steam heat units (powered by the central steam plant) consume 1.203×10^8 British Thermal Units (BTU) of energy per year (Hill AFB 2005c), which equates to 1.167×10^5 cubic feet of natural gas consumption. Based on emissions data supplied by CH2M HILL, Inc. (CH2M HILL 2005), air emissions due to heating Building 225 were calculated as 0.22 pounds per year hazardous air pollutants (HAPs) and 0.86 pounds per year VOCs.

3.2 Solid and Hazardous Wastes

In general, hazardous wastes include substances that, because of their concentration, physical, chemical, or other characteristics, may present substantial danger to public health or welfare or to the environment when released into the environment or otherwise improperly managed. Hazardous wastes generated at Hill AFB are managed as specified in the *Hill AFB Hazardous Waste Management Plan* with oversight by personnel from the Environmental Management Directorate and the Defense Reutilization and Marketing Office. Hazardous wastes at Hill AFB are properly stored during characterization, and then manifested and transported off site for treatment and/or disposal.

Related to the proposed renovation of Building 225, hazardous wastes currently being generated are minor amounts of lead based paint as the paint chips and peels from interior surfaces. Shallow soil contamination regulated by CERCLA does exist in the vicinity of Building 225 (personal communication, Mr. Mark Loucks). Since groundwater is present at depths exceeding 100 feet, compared to a maximum excavation depth of four feet, contaminated groundwater is not an issue of concern.

3.3 Cultural and Historical Resources

Building 225 is an historic structure, and has been determined eligible for inclusion in the *National Register of Historic Places*.

3.4 Physical Environment (Surface Soils)

The surface soils in the vicinity of proposed excavations are flat and covered with concrete pavement. Shallow soil contamination regulated by CERCLA does exist in the vicinity of Building 225 (personal communication, Mr. Mark Loucks).

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Air Quality

4.1.1 Impacts of the Proposed Action

The only proposed excavation for this renovation would be limited to interior floor pits for utilities, with a surface area of 1,080 square feet (ft^2). Due to the work occurring in an existing indoor work space, both the concrete being cut and the soil being moved would be kept moist; no fugitive dust emissions would be generated.

The internal combustion engines of heavy equipment would generate emissions of PM-10, VOCs, NO_x, and CO. Assumptions and estimated emissions for the construction period are listed in Table 1.

Table 1: Calculated Heavy Equipment Emissions

Data Assumptions

Equipment Type	Diesel Emission Factor (lbs/hr)					
	VOC (HC)	CO	NOx	PM10	HAPs	SOx
Bobcat Loader	0.14	0.67	1.00	0.10	0.01	0.08
Concrete Truck	0.80	3.55	8.50	0.69	0.15	0.72
Dump Truck	0.63	2.04	6.98	0.58	0.16	0.65
Flat Bed Truck	0.48	1.54	5.29	0.44	0.12	0.49
Fork Lift	0.42	2.47	1.98	0.40	0.05	0.23
Generator	0.02	0.10	0.12	0.02	0.00	0.01
Vibratory Compactor	0.38	1.44	4.31	0.36	0.09	0.46

Note: VOCs = Hydrocarbons and HAPs = Aldehydes
Source: Industry Horsepower Ratings and EPA 460/3-91-02

Renovate Building 225

EQUIPMENT TYPE	HOURS OF OPERATION	Diesel Emissions (lbs)					
		VOC	CO	NOx	PM10	HAPs	SOx
Bobcat Loader	8	1.12	5.36	8	0.8	0.08	0.64
Concrete Truck	8	6.4	28.4	68.0	5.5	1.2	5.8
Dump Truck	40	25.2	81.6	279.2	23.2	6.4	26.0
Flat Bed Truck	40	19.2	61.6	211.6	17.6	4.8	19.6
Fork Lift	130	54.6	321.1	257.4	52.0	6.5	29.9
Generator	408	8.2	40.8	49.0	8.2	0.0	4.1
Vibratory Compactor	4	1.5	5.8	17.2	1.4	0.4	1.8
TOTAL ESTIMATED EMISSIONS (lbs)		**116.2**	**544.6**	**890.4**	**108.7**	**19.3**	**87.8**
TOTAL ESTIMATED EMISSIONS (tons)		**0.06**	**0.27**	**0.45**	**0.05**	**0.01**	**0.04**

Source of Hours: Discussions With Mark Rorabaugh, Hill AFB Facility Engineer

A detailed asbestos survey would be performed by Hill AFB employees prior to writing the specifications for the renovation contract. The asbestos abatement contractor would be verified by Hill AFB project managers as qualified to perform regulated asbestos abatement projects, and both the company and individual workers would possess all required certifications to perform the assigned tasks. Prior to beginning any asbestos abatement efforts, a notification of at least 10 days would be provided to DAQ. Because all work would be performed in accordance with standards set by the US Environmental Protection Agency (EPA) and DAQ, there are no impacts to air quality associated with the asbestos abatement portion of the proposed action.

HAPs and VOCs would be released to the atmosphere both from epoxy-based concrete sealant and from paint. Approximately 12,300 gallons of epoxy-based concrete sealant would be used. Based on this volume and the material safety data sheets for the proposed sealants, 211 pounds of HAPs and 15,575 pounds of VOCs would be released to the atmosphere. Approximately 3,000 gallons of primer and paint would be used. Based on this volume and the material safety data sheets for the proposed primer and paint, 778 pounds of HAPs and 778 pounds of VOCs would be released to the atmosphere.

The proposed heating units would be comprised of infrared heating systems in four locations, powered by natural gas, consuming 1.869×10^7 BTU per year each (7.476×10^7 BTU per year aggregate [Hill AFB 2005c]). Compared to the current use of the central steam plant, the proposed action would reduce energy demand by 4.553×10^7 BTU/year. This equates to reducing natural gas consumption by 4.416×10^4 cubic feet per year, with an associated air emissions reduction of approximately 0.08 pounds per year HAPs and 0.33 pounds per year VOCs. This represents a 38 percent decrease in air emissions compared to existing conditions, but since the emission values are very small, the reduction is insignificant.

Related to conformity with Utah's *State Implementation Plan*, and therefore the Clean Air Act's *General Conformity Rule* and 40 CFR 93.154, the proposed construction is expected to require less than six months to complete, and operating the facility would slightly reduce air emissions, not increase them. Therefore, conformity was determined to exist.

4.1.2 Impacts of the No Action Alternative

There would be no construction-related air quality impacts associated with the no action alternative. Under the no action alternative, air emissions from heating Building 225 would stay the same as currently exist (see Section 3.1).

4.1.3 Cumulative Impacts

Construction-related air emissions would be temporary. There are no cumulative impacts to air quality associated with implementing the proposed action. There are no cumulative air quality impacts associated with operation of the no action alternative.

4.2 Solid and Hazardous Wastes

4.2.1 Impacts of the Proposed Action

During the proposed construction activities, minor amounts of construction debris would be generated, and treated as uncontaminated trash. It is possible that equipment failure or a spill of fuel, lubricants, or construction-related chemicals could generate solid or hazardous wastes.

Hill AFB personnel have specified procedures for handling construction-related solid and hazardous wastes in their engineering construction specifications. The procedures are stated in *Section 01000, General Requirements, Part 1, General, Section 1.24, Environmental Protection*. All solid non-hazardous waste is collected and disposed on a daily basis. Samples from suspect wastes are analyzed for hazardous vs. non-hazardous determination. The suspect waste is safely stored while analytical results are pending. Hazardous wastes are stored at sites operated in accordance with the requirements of 40 CFR 265. The regulations require the generator to characterize hazardous wastes with analyses or process knowledge. Hazardous wastes are eventually labeled, transported, treated, and disposed in accordance with federal and state regulations.

Any friable asbestos detected during the detailed asbestos survey and subsequently removed during an abatement action, would be disposed in accordance with permit requirements at a disposal facility that is approved to accept friable asbestos. Loose flakes of lead-based paint (confirmed to contain lead by on-site inspections using a portable X-ray fluorescence [XRF] analyzer) would be scraped, collected, and properly disposed at a permitted hazardous waste disposal facility. Dielectric fluid from any transformers or light ballasts suspected of containing polychlorinated biphenyls (PCBs) would be tested, and the equipment would be properly disposed as either a regulated waste (PCB content of 50 parts per million [ppm] or more) or as uncontaminated trash (PCB content less than 50 ppm). Materials used to clean surface grime prior to painting would be sampled and tested for chromium content using EPA's Toxicity Characteristic Leaching Procedure (TCLP). If cadmium concentration in the leachate equaled or exceeded 1.0 milligrams per liter (mg/ℓ), the materials would be disposed as hazardous waste at a permitted hazardous waste disposal facility; otherwise, they would be disposed as uncontaminated trash.

Non-friable asbestos, and lead-based paint that is still affixed to surfaces, would be disposed at a local construction debris (Class VI) landfill. Class VI landfills are allowed

to accept construction and demolition waste, including: non friable asbestos; lead based paint that is still affixed to surfaces; and a quantity of 10 PCB-containing light ballasts per structure.

The potential for contaminated surface soils to create a hazardous waste stream is discussed in Section 4.4.

4.2.2 Impacts of the No Action Alternative

With respect to solid and hazardous wastes, current conditions would continue under the no action alternative (see Section 3.2).

4.2.3 Cumulative Impacts

Proper handling of solid and hazardous wastes eliminates releases of contaminants to the environment. There are no cumulative solid or hazardous waste impacts associated with the proposed action. There are no cumulative solid or hazardous waste impacts associated with the no action alternative.

4.3 Cultural and Historical Resources

4.3.1 Impacts of the Proposed Action

The proposed renovation of Building 225 would have no adverse affect on cultural or historical resources. The skylights would be replaced in kind, in conformance to standards that have been approved by the secretary of the US Department of Interior related to rehabilitation of historic buildings. The remaining proposed activities would not impact the historic character of the building. For example, only the flat portion of the roof (not visible from locations around the building), not the arched portions of the roof, would be replaced.

4.3.2 Impacts of the No Action Alternative

With respect to cultural and historical resources, the no action alternative has no impacts.

4.3.3 Cumulative Impacts

There are no cumulative impacts to cultural and historical resources associated with the proposed action or with the no action alternative.

4.4 Physical Environment (Surface Soils)

4.4.1 Impacts of the Proposed Action

No bare soil areas or vegetated areas would be disturbed by the proposed action. Contamination of shallow soil does exist beneath Building 225. The narrow trenches that could be constructed within the existing building to house cables, conduit, and pipes are not in a known contaminated area (personal communication, Mark Loucks). However, if excavated soils were to exhibit suspicious odors or appearance, the same procedures would be followed as described for construction chemicals in Section 4.2.1.

There are no impacts to surface soils associated with the proposed action.

4.4.2 Impacts of the No Action Alternative

With respect to surface soils, the no action alternative has no impacts.

4.4.3 Cumulative Impacts

There are no cumulative impacts to surface soils associated with the proposed action or with the no action alternative.

4.5 Summary of Impacts

The proposed action and the no action alternative were both considered in detail. The proposed action could be implemented with minor air emissions of short term duration. In the long term, air emissions would be decreased by 0.08 pounds of HAPs and 0.33 pounds of VOCs on an annual basis, which is an insignificant reduction for Hill AFB. The proposed action would eliminate potential worker exposures to asbestos fibers and lead-based paint particles. During construction, wastes containing asbestos, lead-based paint, PCBs, cadmium, and any contaminated soils would all be stored, transported, and disposed properly. The proposed renovation of Building 225 would have no adverse affect on cultural or historical resources. Skylights would be replaced in kind, and the remaining activities would not impact the historic character of the building. No long-term environmental impacts are expected from either the proposed action or the no action alternative.

Table 2: Summary Comparison of Alternatives

Issue	**Proposed Action** **Renovate Building 225**	**No Action** **Do Not Renovate Building 225**
Air Quality	There would be minor, temporary construction-related emissions. Long term, a very small (insignificant) reduction in air emissions would be achieved. Eliminates potential worker exposures to asbestos fibers.	Current conditions would continue. Potential for worker exposures to asbestos fibers.
Solid and Hazardous Wastes	Potential hazardous wastes would be tested and disposed as required by law. Eliminates potential worker exposures to lead-based paint.	Current conditions would continue. Flakes of lead-based paint would continue to fall.
Cultural and Historical Resources	No adverse impact. Skylights would be replaced in kind, and the remaining activities would not impact the historic character of the building.	No impact.
Surface Soils	No impact.	No impact.

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7.0 REFERENCES

CFR: *Code of Federal Regulations*, US Government Printing Office, Office of the Federal Register (various sections and dates).

CH2M HILL 2005: *BLDG 260 Data.xls*, EXCEL Spreadsheet dated April, 2005.

DAQ 2003: *State of Utah National Ambient Air Quality Standards, Areas of Non-Attainment and Maintenance (Effective May, 1999)*, Utah Division of Air Quality Website, www.airquality.utah.gov/GRAPHICS/MAPS/non_attn.pdf.

EPA 1991: *Nonroad Engine and Vehicle Emission Study - Report,* Table 2-07a, US Environmental Protection Agency EPA 460/3-91-02, 1991.

Hill AFB: *Construction Specifications, Section 01000, General Requirements, Part 1, General, Section 1.24, Environmental Protection*, Hill AFB, UT, current version.

Hill AFB 2005a: *Land Management (Web Page)*
http://www.em.hill.af.mil/conservation/natural/landm.htm.

Hill AFB 2005b: *Fish & Wildlife Management At Hill Air Force Base (Web Page)*
http://www.em.hill.af.mil/conservation/natural/fishwild.htm.

Hill AFB 2005c: E-mail from 2Lt. Timothy Hinko, dated April 26, 2005.

UAC: *Utah Administrative Code*, State of Utah, (various sections and dates).

FINDING OF NO SIGNIFICANT IMPACT

1. NAME OF ACTION: Renovate Building 225 at Hill Air Force Base (AFB), Utah.

2. DESCRIPTION OF THE PROPOSED ACTION: Hill AFB proposes to accommodate current United States Air Force (USAF) missions by renovating Building 225 on Hill AFB. The proposed action is needed to meet operational requirements and to provide safe working conditions.

The proposed building renovation would include completing a variety of structural upgrades, replacing degraded functional systems, removing asbestos and lead based paint, improving security access controls, and completing the renovation while conforming to any historical preservation constraints identified for this hangar.

3. SELECTION CRITERIA: The following criteria were used to assemble alternatives. The facility that accommodates the 309 Aircraft Maintenance Wing (AMXG) F-16 (organizational symbol of 309 AMXG/MXAC) and C-130 (organizational symbol of 309 AMXG/MXAB) modification, repair, and maintenance functions should:

- have sufficient space to house all of the necessary equipment and workers;
- allow workers to efficiently complete their assigned workload;
- provide security measures for the F-16 and C-130 programs; and
- be protective of facilities, human health, and the environment.

4. ALTERNATIVES CONSIDERED OTHER THAN THE PROPOSED ACTION:

Under the no action alternative, it is predicted that Hill AFB may be unable to provide sufficient capacity for modification, repair, and maintenance functions for F-16 and C-130 aircraft. It is therefore possible that aircraft would be grounded, and mission requirements for sorties would not be met.

The 309 AMXG program managers evaluated, but eliminated, other potential locations for housing the activities that currently occur in Building 225. These alternatives were not retained for detailed consideration due to the specialized nature of USAF workload assignments to Hill AFB, and lack of other local facilities with sufficient space and/or security measures to accommodate the F-16 and C-130 workload.

5. SUMMARY OF ANTICIPATED ENVIRONMENTAL EFFECTS:

a. Proposed Action: This alternative fully satisfies all applicable regulations and provides for accomplishment of mission objectives without significant impacts to human health or the environment. The proposed action could be implemented with minor environmental impacts. The proposed action could be implemented with minor air emissions of short term duration. In the long term, air emissions would be decreased by 0.08 pounds of HAPs and 0.33 pounds of VOCs on an annual basis, which is an

insignificant reduction for Hill AFB. The proposed action would eliminate potential worker exposures to asbestos fibers and lead-based paint particles. During construction, wastes containing asbestos, lead-based paint, PCBs, cadmium, and any contaminated soils would all be stored, transported, and disposed properly. The proposed renovation of Building 225 would have no adverse affect on cultural or historical resources. Skylights would be replaced in kind, and the remaining activities would not impact the historic character of the building.

b. No Action Alternative: Under the no action alternative, current conditions would continue. Opportunities to reduce potential worker exposures to asbestos and lead-based paint would not be realized. Under the no action alternative, it is predicted that Hill AFB may be unable to provide sufficient capacity for modification, repair, and maintenance functions for F-16 and C-130 aircraft.

6. FINDING OF NO SIGNIFICANT IMPACT: Based on the above considerations, a Finding of No Significant Impact (FONSI) is appropriate for this assessment.

Approved by: _____ Date: 13 Jul 05
MICHAEL FALINO, Colonel, USAF
Commander